12 Ja 1904

697.4

lot Water Heating

877.4

BY

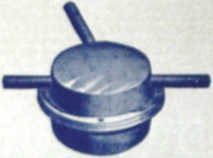
FORCED CIRCULATION.

. CASWELL & CO.

HARTFORD, CONN.

AGENTS WANTED

The POOR MAN cannot afford to be without a Caswell Hot Water Circulator, for ECONOMY'S sake.



Patent Allowed.

PATENTED JAN 2 94

The RICH MAN cannot afford to be without a Caswell Hot Water Circulator, for COMFORT'S sake.

7, 4

CATALOGUE. 1893.

The Caswell Hot Water Circulator,

FOR HEATING

Dwellings, Stores, Greenhouses,
Depots, Schoolhouses, Etc., with Hot Water,

By Forced Circulation.

Manufactured by
F. K. CASWELL & CO.,
Hartford, Conn.

Factory,
Turners Falls,
Mass.

···PRINCIPLE···

OF THE

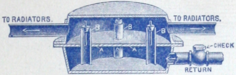
Caswell Hot Water Circulator.

THE Caswell Hot Water Circulator consists of a circulator which is divided into two chambers by the partition as shown at A. Connecting these chambers are four tubes, B, closed at the top by small check valves.

The upper chamber is connected with pipes leading to the radiators and expansion tank, while to the lower are connected the return pipes.

Between the return pipe and the lower chamber a check valve is inserted, allowing the water to ENTER the chamber only.

As the water in the lower chamber is heated, it expands and rises through the tubes, B, to the upper chamber and thence through the pipes to the radiators, where it loses its heat which is given



off into the rooms. As we continue heating the water in the lower chamber, a slight steam pressure is formed, which FORCES the water up to the radiators as before, thus insuring perfect circulation. Now as the water in the radiators grows cooler, and consequently more dense, it passes into the return pipes which conduct it to the lower chamber, it first passing through the check valve.

When the cold water from the return enters the circulator, the steam is instantly condensed, forming a powerful vacuum which draws the remaining water back from the radiators through the return, to be reheated and redistributed as before.

The Caswell Hot Water Circulator, unlike any other, has a FORCED CIRCULATION, and is not dependent upon gravitation alone. In this Heater the circulation is not continuous, but pulsating, therefore the amount of heat furnished the radiators depends directly upon the frequency of the pulsations. This depends, of course, on the fire, and can be regulated from one in nine or ten minutes to one every half minute. With forced circulation no large pipes are required, 1 1-4 in. being sufficient.

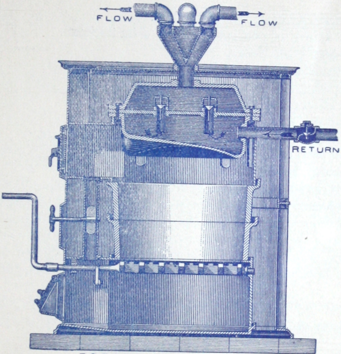
Forced circulation also insures rapidity of action and consequently high temperature of the water delivered to the radiators.

IDY 90-8429 TCF

Improved Portable Setting.

A FEW QUESTIONS ANSWERED.

It is the ONLY Hot Water Heater having a FORCED CIRCULATION.
It is the cheapest Heater made, capacity considered.
It is cast on the "duplicate parts" system, all parts being made interchangeable.
It is constructed and put in on the open tank system, which CAN NEVER EXPLODE.
It will burn hard or soft coal, or wood.
It has a perfect dumping and shaking grate.
ALL of its heating surface is CROWN SURFACE.
One square foot of crown heating surface is equal to twenty square feet of pipes or flues.
It has no gaskets or packed joints; all joints are screwed or turned.
It is sectional; will go through any door or window.
Every Heater is fully guaranteed.
It is the simplest Heater made.
It is tested with 90 lbs. cold water pressure before leaving the factory.
It never makes gas or dust.
It has no brick walls to absorb heat, nor fire-brick to burn out.



FORCED CIRCULATION.

It has a double jacket which retains all the heat.
It has a cast-iron fire-pot of double section and extra thickness.
It is a thoroughly high grade Heater.
It has a dust flue that saves dust and COAL.
It has revolving grates—no CLINKER.
It can be used for direct or indirect radiation.
It has a circular fire-pot, no dead corners.
It has a delivery turret that insures an equal distribution of water.
It uses the smallest pipes of any Hot Water Heater made.
It is not an experiment, but an unqualified success.
Does it work ? It can't help it; it goes by FORCED CIRCULATION.

We strongly recommend covering the flow pipes in the cellar and wherever heat is not required. This is a measure of economy, as it saves coal and promotes the efficiency of the Heater. The return pipes should NOT be covered. We recommend IN ALL CASES the use of automatic air valves on each radiator, also radiator valves having drilled seats, using but one valve for each radiator. Radiators should be tapped at the bottom for both flow and return pipes.

We invite correspondence and shall be pleased to furnish plans, specifications and estimates to persons making inquiry.

SOME ADVANTAGES

OF

HOT WATER HEATING.

HOT water is CHEAPER THAN STEAM. With steam the fuel used in bringing the water to a boiling point is practically wasted, as no heat is given off until steam is produced. As soon as the water falls below the boiling point the steam condenses and the radiation of heat soon ceases. With steam, therefore, the water must be kept at the boiling point as long as ANY heat is required, and the result is a waste of fuel and the production of more heat than is favorable to either health or comfort.

Hot water begins to radiate heat, in some degree, as soon as the fire is started, and continues to do so long after it is out, until the whole body of water is cold. No fuel is burned without a direct benefit of its product going to the radiators.

There are few days in the year when the full capacity of the Heater is required; at all other times the action of the hot water heater can be regulated at the furnace, running the fire very low and using correspondingly little fuel on a mild day.

Its superiority in this respect is even more marked in comparison with hot air furnaces and stoves, which are most extravagant in their consumption of fuel. These conditions are also conducive to greater comfort than can be obtained from any other system of heating, as the temperature of the rooms can always be regulated according to the weather.

The heat in a room can be regulated by partially closing the radiator valve and checking the current of water; while a steam radiator, if not entirely shut off, becomes filled with steam, and correspondingly hot.

The hot water system is the only one which is ABSOLUTELY SAFE. The hot water pipes are never hotter than boiling water, and cannot ignite wood or other inflammable material that may be near or against them.

The hot water apparatus is entirely noiseless and free from the hammering sound in the pipes, a disagreeable feature always accompanying the use of steam.

With hot water, the rooms are never filled with disagreeable and poisonous gases, cold blasts or ashes, which always arise from hot-air registers.

The hot, dry atmosphere of rooms heated by steam or furnaces is entirely avoided in the hot water system, as the air is not burned and vitiated by contact with over-heated surfaces.

These and many other facts having been established by experience and by the testimony of expert sanitary engineers, show the superiority of hot water over all other methods of heating.

TABLE

SIZES AND CAPACITIES.

NO. OF HEATER,	8	10	12	14	16
Diameter of Casing,	32 in.	36 in.	40 in.	44 in.	48 in.
Height of Heater,	47 in.	47 in.	47 in.	47 in.	47 in.
Diameter of Fire-pot,	17 in.	21 in.	24 in.	27 in.	29 in.
Number and Diameter of Flow-pipe Openings,	4, 2 in.	4, 2 in.	4, 2 in.	4, 2½ in.	4, 2½ in.
Number and Diameter of Return-pipe Openings,	1, 2 in.	1, 2 in.	1, 2 in.	1, 2½ in.	1, 2½ in.
Capacity, Direct Radiation, Square Feet,	325	600	775	900	1,200
Size of Coal,	Small Egg.	Small Egg.	Egg.	Egg.	Egg.
Diameter of Smoke-pipe,	6 in.	7 in.	8 in.	10 in.	12 in.

For prices and estimates enquire of agents.

It is our policy to protect the trade, and we do no contracting nor fitting; but we take pleasure in furnishing, gratuitously, practical information on Hot Water Heating by FORCED CIRCULATION.